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ORIGINAL ARTICLE

Ethnomedicinal Plants used in Women's Reproductive Healthcare and Gynecological Disorders at Gyanpur, Bhadohi District, Uttar Pradesh, India

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ABSTRACT

Traditional medicinal plants have long been integral to women's healthcare, especially in reproductive health and maternal care. The present study compiled ethnomedicinal information on eighteen plants belonging to various families that are traditionally used to manage gynecological and obstetric conditions. These plants are known to possess diverse phytoconstituents such as alkaloids, flavonoids, saponins, tannins, glycosides, sterols and other bioactive compounds, which contribute to their therapeutic properties. The plants are traditionally used for relief during labour pain, regulating menstruation, promoting uterine health, treating leucorrhoea, managing infertility, acting as contraceptives, preventing or inducing abortion, and supporting post-delivery recovery and lactation. Fabaceae, Liliaceae and Amaranthaceae are the most dominating families in this field. Many plants such as Abrus precatorius, Acacia arabica, Boerhaavia diffusa and Rauwolfia serpentina are reputed for their parturient and labour-relieving effects. Several others including Aloe vera, Achyranthes aspera and Moringa oleifera are used to regulate menstruation and manage associated disorders. Plants like Azadirachta indica and Butea monosperma are valued in the treatment of vaginal infections and leucorrhoea. Additionally, species such as Asparagus racemosus and Linum usitatissimum support postnatal health by promoting lactation and providing essential nutrition. The presence of potent phytochemicals such as alkaloids (abrin, reserpine, hyoscyamine), glycosides (shatavarin, diosgenin), saponins and flavonoids underpins the pharmacological potential of these species. Present documentation highlights the importance of ethnomedicinal plants in women's health and underscores the need for scientific validation of their safety and efficacy to support their rational use in modern healthcare.

Keywords: *medicinal plants, gynaecological disorders, phytochemicals, pharmacological uses*

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INTRODUCTION

Since ancient times, medicinal plants have been used in traditional systems like Ayurveda which treat some disorders naturally and safely. The classical work of Ayurveda like Charak Samhita and Susruta Samhita proved to be Magmum Opus in the work of medicine, depicting the uses of these plants in the treatments of various ailments. Medicinal plants are used in different forms such as powders, oils, juices, pastes, capsules, and ayurvedic medicines. Different parts of the plants like roots, leaves, flowers, seeds, and bark are used for preparing the remedies (Agharkar, 1954). Medicinal plants contain natural chemical compounds that help in reducing pain, balancing hormones, improving blood circulation and also improve immunity (Mishra *et al.,* 2017). Many people prefer

herbal remedies because they usually have fewer side effects compared to chemical medicine.

In many rural areas, people still rely on herbal remedies for treating different disorders because of easily availability of such plants in their surroundings and are also much more affordable than modern medicines. However, medicinal plants should always be used with proper care and under the guidance of a qualified doctor or Ayurvedic expert. Every herb may not be suitable for every person, as the effect can vary according to age, health condition, and body type. Excessive or incorrect use of certain herbs may cause side effects such as allergies, stomach problems, or hormonal imbalance (Mishra *et al.,* 2019). Therefore, proper dosage and expert advice are important to ensure safe and effective treatment.

Traditional knowledge about medicinal plants is often passed down from one generation to another also helpful to healthcare (Anonymous, 2000). But the knowledge of traditional medicinal plants and their uses is gradually declining in modern society. With rapid modernization and dependence on chemical-based medicines is increase in younger generations and are losing interest in traditional healthcare practices. As a result, valuable knowledge about medicinal plants and their healing properties is slowly disappearing.

At the same time, biodiversity in the surrounding environment is also decreasing due to deforestation, pollution, excessive use of chemicals and destruction of natural habitats. Many important medicinal plants are becoming rare or extinct because forests and green areas are being cut down for industries, roads, and buildings. Climate change and environmental degradation further affect the growth and survival of these plants. The decline in environmental health directly reduces the availability of natural herbs used in Ayurveda and traditional medicine.

The declining availability of such plants and fading of local traditional knowledge make the sustainable managements of the natural habitats is now a crucial environmental issue concerning biodiversity conservation and welfare of local communities (Kirtikar & Basu, 1918 and Jain, 1996). Therefore, present study is focusing on the collection of different medicinal plants, their properties, application in traditional healthcare and also spread awareness about the importance herbal medicine through traditional knowledge.

MATERIAL AND METHODS

Gyanpur is a headquarter of Bhadohi district and is situated in the midway of two cities viz Varanasi and Prayagraj, about 65 km apart from each place and in latitude 25.19 north and longitude 82.28 East. It lies at a height of 285 feet above the sea level. The temperature raises upto 110-degree Fahrenheit in months of summer May – June, while coldest in months of January, its average rainfall is about 40 cm. The soil in general is clayey, alluvial and alkaline.

Gyanpur is a rural area and women live in these areas are educationally and financially very poor. It is not possible for them to go to the healthcare and multispeciality centers due to financial problems. In addition, healthcare workers have provided basic advice, support during and after pregnancy and child birth, which is based on primary traditional knowledge and experience, acquired through the practice of the community where they originated. In previous years, very little work had been done in this regard on the biodiversity of Gyanpur (Mishra *et al*. 2016a & b; Lal & Singh 2000). However, these traditional remedies have not been thoroughly documented in Gyanpur. Therefore, present studies designed to documentation and illustration of some important medicinal plants of this region.

To complete the present observations, medicinal plants have been collected from different parts of Gyanpur region. The collected plants were processed and herbarium sheets were prepared byfollowing customary methods (Lawrance, 1951) with slight modifications. Plants were properly dried up by changing a number of newspapers and poisoned with mercuric chloride solution in alcohol. Later on, the dried specimens were

mounted on standard herbarium sheets, labelled properly and arranged alphabetically according to their botanical names. The voucher specimens were deposited in the Department of Botany, Kashi Naresh Government P.G. College, Gyanpur.

OBSERVATIONS

The collections of medicinal plants have been done from different places of Gyanpur and preserve them in the laboratory of the department for further identification as well as study of pharmacological applications and documentation as per suggestions of Lawrence (1951).

1. *Abrus precatorius* (L.) Gaertn., Fabaceae Lindl. Ratti (h).

Taxonomic Description: Deciduous woody twiner, stipule linear; leaf rachis bristle-tipped, hairy; leaflets are oblong, measuring 2.5 cm long and 8-20 paires, oblong, rounded and apiculate at apex, glaberous above, appresses hairy beneath. Racemes axillary, pedunculate. Flowers pale- violet, turning red; pedicels short. Calyx appressed- hairy outside; teeth very short. Corolla: vexillum clawed, wings falcate shorter than keel. The plant produces short and stout brownish pods, which curl back on opening to reveal pendulous red and black seeds, 4-6 peas in a pod. Flowering and fruiting September to January (Plate 1).

Phytochemicals: Abrasine, Abruguinone, Abrus agglutinin, Abruslactone, Abrus agglutinin APA-1, Abrus agglutinin APA-2, Precasin, Precatorian, Abrusgenic acid. In leaf Abrine, Abrusoside-A, and Abrusoside-B.

Pharmacological uses: Relief labour pain, contraceptive

2. *Acacia arabica* auct.non (Lam.) Willd., Fabaceae, babul

Taxonomic Description: Small tree, straight 4-10m tall, bark blackish, rough, deeply fissured. Pinnae 3-7 pairs, 2-5 cm long; leaflets 8-20 pairs, subsessile, 3-7x1-1.6m m, linear-oblong, apex obtuse, base oblique. Spines 1.5-3.5 cm long, straight polished white. Pods 8-15x1.2-1.7 cm, beaked. Flowering and fruiting Feb-Nov.

Phytochemicals: octacosanol, betulin, flavonoids, a-amyrin and B-sitosterol, enzyme, arabin, tannic and gallic acids, cresol, methyl salicylate, complex salts of calcium.

Pharmalogical uses: Helps during delivery

3. *Achyranthes asperaL*. Amaranthaceae Juss Chirchita, Apamarg

Taxonomic Description: Erect annual herb, leaves large, ovate, acute or acuminate, glabrous. Flowers greenish white, deflexed, in terminal spikes elongating in fruits, bracts and bracteoles persistent, ending in a spine, utricle oblong, seeds sub cylindrical, brown (Plate 1).

Phytochemicals: achyranthin, saponin A&B, ecdysterone, ecdstone, inokosterone and aminoacids.

Pharmacological uses: Relief during delivery, Amenorrhoea

4. *Aloevera* (L.) Webb. & Berth. (non-Mill). Liliaceae Juss., Ghritkumari

Taxonomic Description: Perennial herb, stoloniferous plant, leaf rosettes arising from ground, 60-80cm height, leaves erect, thick, numerous gloucous-green lanceolate, long-acuminate, thorn-edged, flowers vermilion coloured, in simple, racemes, the lower flowers falling off as the racemes elongates. Stamens equal in the perianth. Flowering and fruiting November – March

Phytochemicals: aloin, isobarbaloin, emodin, chysophanic acid, aloesin, aloesone, glycosides and barbaloin.

Pharmacological uses: Cures menstruation and abortion

5. *Amaranthus viridis* L. Amaranthaceae Juss Chaulai

Taxonomic Description: Erect or ascending herbs, upto 1.25m high. Stem striate, often purple-tinged, hairy on young parts. Leaves ovate-lanceolate to oblong, acute or decurrent below; petiole variable in length. Flower clusters dense, lower ones exclusively female. Spikes with upper flowers all male and female flower inter-mixed, green or crimson. Bracts and bracteoles broad or deltoid-ovate, pale, membranous. Tepals elliptic or oblong-elliptic, narrowed above. Stigmas 3, erect or recurved. Capsule ovoid-urceolate, with a neck below style base. Seeds lenticular brown or black, shining. Flowering and fruiting July-November (Plate 1).

Phytochemicals: stigmasterol, campesterol, b-sitosterol, glycosides, a-spinasterol, octacosanoate, oleanolic acid, saponin and D-glucuronic acid.

Pharmacological uses: whole plant is used for snake-bite, burning sensation, dyspepsia, gonorrhea and menorrhea.

Table 1: List of medicinal plants of Gyanpur along with their phytochemicals and pharmacological uses

S.No.	Botanical Name	Local Name	Family	Key Phytochemicals	Pharmacological Uses
1	*Abrus precatorius* (L.) Gaertn.	Ratti	Fabaceae	Abrasine, Abrin, Abrus agglutinin	Relief in labour pain, contraceptive
2	*Acacia arabica* Willd.	Babul	Fabaceae	Flavonoids, tannins, betulin	Helps during delivery
3	*Achyranthes aspera* L.	Chirchita, Apamarg	Amaranthaceae	Achyranthin, saponins, ecdysterone	Relief during delivery, amenorrhoea
4	*Aloe vera* (L.) Burm.f.	Ghritkumari	Liliaceae	Aloin, emodin, barbaloin	Regulates menstruation, abortion-related uses
5	*Amaranthus viridis* L.	Chaulai	Amaranthaceae	Stigmasterol, saponins	Used in menorrhoea and other disorders
6	*Argemone mexicana* L.	Satyanashi	Papaveraceae	Berberine, protopine	Cures leucorrhoea
7	*Asparagus racemosus* Willd.	Shatavari	Liliaceae	Shatavarin, diosgenin	Promotes milk secretion, uterine health
8	*Azadirachta indica* L.	Neem	Meliaceae	Nimbin, azadirachtin	Treats vaginal infections
9	*Boerhaavia diffusa* L.	Punarnava	Nyctaginaceae	Punarnavine, sterols	Relief during delivery
10	*Butea monosperma* (Lam.) Taub.	Palas	Fabaceae	Butin, butein	Used in leucorrhoea
11	*Calotropis gigantea* (L.) R.Br.	Safed Madar	Asclepiadaceae	Calotropin, calotoxin	Contraceptive
12	*Carica papaya* L.	Papita	Caricaceae	Papain, carpaine	Contraceptive
13	*Datura metel* L.	Dhatura	Solanaceae	Hyoscyamine, scopolamine	Used in sterility
14	*Linum usitatissimum* L.	Flax	Linaceae	Cyanogenic glycosides, lignans	Post-delivery nutrition
15	*Mangifera indica* L.	Mango	Anacardiaceae	Oleic acid, flavonoids	Used in leucorrhoea
16	*Mimosa pudica* L.	Lajwanti	Mimosaceae	Mimosine, alkaloids	Treats uterine disorders
17	*Moringa oleifera* Lam.	Sahajan	Moringaceae	Oleic acid, phenolics	Controls excessive menstruation
18	*Rauwolfia serpentina* (L.) Benth. ex Kurz	Sarpagandha	Apocynaceae	Reserpine, ajmaline	Relief in labour pain

6. *Argemone maxicana* L. Papaveraceae Juss., Satyanashi

Taxonomic Description: Undershrub, stems, woody, herbaceous, leaves glaucous, prickly, sinuate-pinnatified, flowers yellow, stigmas red, capsules erect prickly, dehiscing by valves, seeds black. Flowering and fruiting April- September (Plate 1).

PLATE 1.A. *Abrus precatorious L.* **B.** *Achyranthes aspera* **C**. *Aloe vera* (L.) **D**. *Amaranthus viridisL.* **E**. Argemone maxicana L. **F**. *Asparagus racemosus Willd.* **G**. *Azadirachta indica* Juss. **H**. *Bauhinia variegate* L

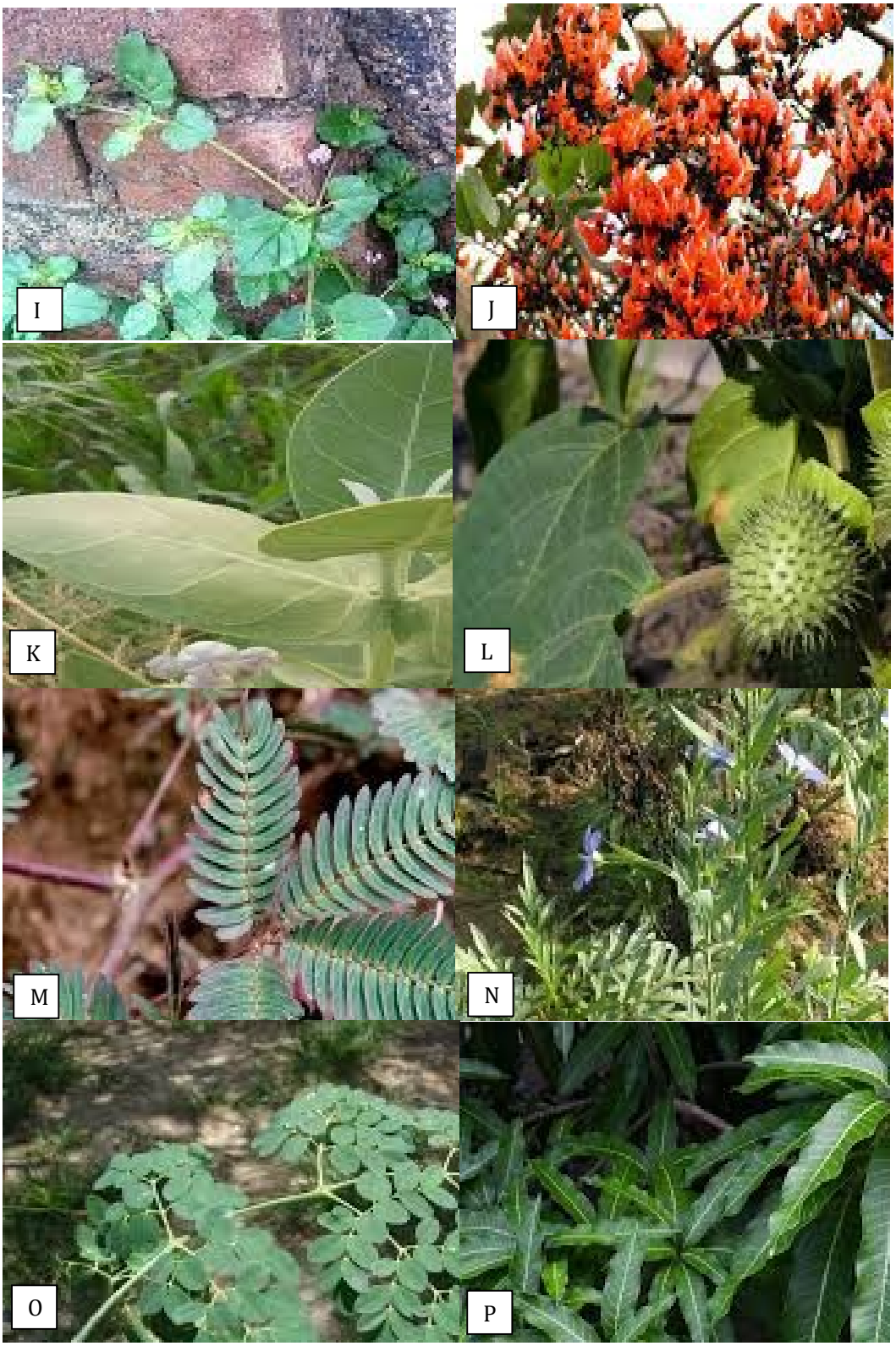

PLATE -2. I. *Boeraahvia diffusa* L. **J**. *Butea monosperma (Lam.).* **K.** *Calotropis procera (Alton).* **L.** *Datura metal* L. **M.** *Mimosa pudica L*. **N L***inum usatissimum (Linn.).* **O.** *Moringa oleifera Lam.* **P**. *Mangifera indica* L

Phytochemicals: protopine, berberine nitrate, ceryl alcohol, b-sitosterol, succinic acid and tartaric acid.
Pharmacological uses: Cures Leucorrhoea

7. *Asparagus racemosus* Willd. Liliaceae Juss Satavar
Taxonomic Description: A straggling or scandent, much branched, spinous shrub, stem woody, grey white. Spine suberect or subrecurved. Cladodes 2-6 together, narrowly oblong–linear, falcate. Flowers small, white, in solitary or fascicled, simple or branched racemes, berries globose. Flowering and fruiting August – February (Plate 1).
Phytochemicals: shatavarin I, II, III, IV, diosgenin, quercetin, rutin, sitosterol, stigmasterol, glucosides, b-sitosterol and a-amyrin
Pharmacological uses: Promotes milk secretion, uterine problem

8. *Azadirachta indica* L., Meliaceae Juss., Neem
Taxonomic Description: A large tree, leaves 20-30cm long, crowded near the ends of the branches, pinnate. Leaflets 10-12 serrate, flowers white, scented, anthers 10, ovary 3 celled, drupes ovoid-oblong, smooth, yellow when ripe. Flowering and fruiting March–July (Plate 1).
Phytochemicals: nimidol, nimbolin A&B, nimbosterol, nimbin, nimbidin, nimbolide, azadiradione, azadirone, meliantriol, meldenin, naheedin, meliacarpin, nimbiol, quercetinand- nimbin.
Pharmacological uses: Vaginal infection

9. *Boerhaavia diffusa* L. Nyctaginaceae Punarnava
Taxonomic Description: diffuse herb, stem prostrate, divaricately branched, slender, purplish, swollen at nodes, spreading to 30-60 cm. leaves opposite, in unequal pairs, at each node. Larger 3-4 cm, the smaller 1-2 cm, broadly ovate, obtuse, base rounded, margins pink, undulate, petioles 2-4 cm, flowers dark pink, funnel shaped, very small, sessile, 4-10 in umbels 5-8 mm diameter, arranged in terminal panicles. Perianth 5 lobed, stamens 2-3, exserted. Plant parts used-fresh whole plant, root, leaves and flower (Plate 2).
Phytochemicals: punarnavine, sterol, beta-sitosterol, stearic acid, palmitic acid, minerals, sodium sulphate, potassium nitrate
Pharmacological uses: Relief delivery

10. *Butea monosperma* (Lamk) Taub. Syn B. frondosa Koen. ex Roxb. Palas
Taxonomic description: medium sized deciduous tree, very conspicuous when in flame, 10-20m high, stem crooked; bark rough, light grey, leaves 3 foliate, petioles 10-15 cm, leaflets 10-20 cm, terminal leaflet bigger, glabrous above, silky beneath, obovate. Flowers in racemes 15 cm long, 3 flowers together on olive-green velvety rhacis; pedicels 3 cm, brown, velvety. Calyx 1 cm, densely olive green, velvety. Corolla 5 cm, with silky hairs, crimson-orange coloured. Pods flat, covered with grey stiff hairs, 1-seeded. Host tree for lac insects. It yields kino gum, wood grey soft and sand to be durable in water. Plant parts used- seeds. Flowering February-March fruiting May-July (Plate 2).
Phytochemicals: resin, butin, butein, glucoside, sulphurein, palasttrin, butrin, isobutrin, gum contains thiamine, riboflavin, palmitic, stearic acid.
Pharmacological uses: used as a Leucorrhoea

11. *Calotropis gigantea* (L.) R.Br. Asclepiadaceae R.Br., Safed madar
Taxonomic description: Large shrub, reaching small tree size. Leaves elliptic to obovate, 10-20 cm long, amplexicaul or cordate at base, with a ring of glandular lateral hairs at the base of lamina. Flowers white, sub umbellate cymes. Sepals are cottony. Corolla campanulate, divided more than half- way down, lobes revolute and twisted in age.

Follicles in pairs, boat shaped, with a hooked tip, cottony pubescent. Seeds with long silky coma. Flowering and fruiting throughout the year (Plate 2).
Phytochemicals: calotoxin, calotropin, syriogenin, proceroside, uscharidin, voruscharin, theaspirone and calactinic acid.
Pharmacological uses: Contraceptive

12. *Carica papaya* L., Caricaceae Dum., Papita
Taxonomic description: A rapidly growing tree, 4-5m in height, weak, succulent trunk and milky sap. Leves are palmately lobed. Flowers are creamy yellow. Male flowers are long, drooping panicles and female in short clusters. Flowering and fruiting August – November
Phytochemicals: papain, carpain, carposide, glycoside, carpaine and chymopapain.
Pharmacological uses: Contraceptive

13. *Datura metal* L. Solanaceae Juss Dhatura
Taxonomic description: Erect, perennial, widely branched herb, stem flexuous, nearly glaberous or short hairy; lenticillate. Leaves ovate-triangular to elliptic, obliquely rounded at base, acute or acuminate, repand-dentate to lobed, short hairy and glaberous. Petiole 1-15 cm long, flowers 0.5-1 cm long pedicels, calyx subterete, 5-6 cm long; lobes triangular, acuminate, corolla white or purple; lobes 5, with an acumen of 1-2cm long; fruit pendulous, globose, glabrous or hairy, with conical prickles. Flowering and fruiting throughout the year (Plate 2).
Phytochemicals: hyos cyamine, hyoscine, meteloidine, tropine, pseudotropine, scopolamine, hyoscine, hyoscyamine, daturanolone and fastusidine.
Pharmacological uses: Cures sterility

14. *Linum usitatissimum* Sieber ex Lehm. Linaceae, flax
Taxonomic description: An erect annual herb, 70cm or taller, leaves linear or lanceolate; flowers blue, in a terminal, leafy panicle, styles free, stigmas clavate; capsule 5 celled, spherical. Flowering and fruiting June – September
Phytochemicals: cyanogenic glycosides, phenolics, trysin inhibitor, linatin, lignana, minerals, vitamins. Cadmium, selenium and cyclolinopeptides.
Pharmacological uses: Sweet cakes made from seeds are given after child birth to women.

15. *Mangifera indica* L. Anacardiaceae Lindle. Mango
Taxonomic description: A medium sized tree, evergreen, forming a dense crown, bark grayish- black or grey-white. Leaves 5-10 x 3.4-5cm, obovate, oblong or elliptic, rounded or emerginate at tip, shining above. Flowers solitary or fascicled. Berries ovoid, 1-seeded. Flowering and fruiting February – May (Plate 2).
Phytochemicals: Oleic acid, linoleidic acid, linoleic acid, lupeol acetate, oleanolic acid, apigenin-7-o-a-L-rhamnoside, myricetin-3-o-a-L-rhamnoside, myrcene, terpinolene, ethyloctanoate, ethyl decanoate, p-cymene, hinesol, pogostol, sesqiterpene, hexadecanol, and caffeic acid.
Pharmacological uses: leucorrhoea

16. *Mimosa pudica* L., Mimosaceae R.Br., Chui-mui, Lajwanti
Taxonomic description: Young branches red, closely ribbed, beset with short recurved prickles, rachis upto 20cm long, prickly; pinnae with 16-20 pairs of oblong unequal sided, obtuse, mucronate, leaflets. Flower tetramerous, pink in globose, pedunculate heads at branch ends forming a leafy, terminal panicle. Stamens 8 long excerted. Pods falcate, glabrous, 4-10 jointed. Flowering and fruiting August – March (Plate 2).

Phytochemicals: L-mimosine, b-sitosterol, d-pinitol, nor-epinephrine, glycosides, saponins and coumarin.
Pharmacological uses: Cure Uterine disorers

17. *Moringa oleifera* Lamk., Moringaceae Adans. Sahajan
Taxonomic description: A small or large tree, trunk grey white with longitudinal wrinkles. Leaves small, multipinnate, leaflets obovate or elliptic, flowers pale whitish, fragrant, pods long greenish pendulous. Flowering and fruiting January – June (Plate 2).
Phytochemicals: 16-tetramethylheptadecan-4-olide, 3-5-bis(1,1-dimethylethyl)-phenol, 1-hexadecanol, 3, 7, 11, 15- tetramethyl-2hexadecene-1-ol, hexadecanoic acid, 1, 2, 3-propanetriylester-9 octadecenoic acid and oleic acid.
Pharmacological uses: Cures excess menstruation

18. *Rauwolfia serpentina* (L.) Benth. Ex. Kurz., *Apocynaceae Juss*., Sarpgandha
Taxonomic description: Erect, glabrous, perennial herb under shrub, leaves whorled, lanceolate or oblanceolate, acute or acuminate, narrowed into a short petiole; flowers white or pinkish, arranged in corymbose cymes, pedicels and calyx red. Bracts minute, lanceolate. Calyx lobes lanceolate, corolla tube inflated above the middle; lobes elliptic-oblong. Drupe purplish black. Flowering and fruiting November – January.
Phytochemicals: Reserpilene, reserpine, sarpagine, serpinine, serpentine, ajmalin, ajmalinin, ajmalicin, yohimbine, alloyohimbine, isoyohimbine, chandrine, deserpidine, isoajmaline, rauvolfinine, raunatine
Pharmacological uses: Powdered root with black pepper in cup of water given to women during labour pain

DISCUSSION

The present study conducted in the rural area of Gyanpur in Bhadohi highlights the significant role of traditional medicinal plants in women's healthcare, particularly in gynecological and obstetric practices. Rural communities continue to depend on ethnomedicinal knowledge for the treatment of reproductive disorders due to the easy availability, affordability, and cultural acceptance of herbal remedies. The findings reveal that local people possess valuable indigenous knowledge regarding the therapeutic use of medicinal plants for menstruation-related problems, labour pain, infertility, leucorrhoea, contraception, abortion and postnatal care.

The dominance of plant families such as Fabaceae, Liliaceae, and Amaranthaceae indicates their rich medicinal potential and widespread use in traditional systems of medicine. Similar observations have also been reported in other ethnobotanical studies, where these families are considered important sources of bioactive compounds with pharmacological activities (Chopra *et al.,* 1956, Chopra 1982, Mishra *et al*. 2016a; Lal & Singh 2000). The presence of diverse phytoconstituents including alkaloids, flavonoids, tannins, saponins, glycosides, and sterols supports the medicinal value of these plants and justifies their traditional applications in women's health disorders.

The study also emphasizes the pharmacological importance of phytochemicals like reserpine, abrin, hyoscyamine, diosgenin, flavonoids, and saponins. These compounds are known for their diverse biological activities including antimicrobial, anti-inflammatory, analgesic, hormonal, and antioxidant effects. Such properties support the traditional claims regarding the effectiveness of these plants in managing women's reproductive health issues. However, some medicinal plants may possess toxic effects if consumed in inappropriate doses, especially plants used for inducing abortion or contraception. Therefore, proper dosage and scientific validation are necessary before their wider therapeutic application.

Despite their importance, traditional knowledge related to medicinal plants is gradually declining due to modernization, changing lifestyles, reduced interest among younger

generations, and loss of biodiversity in surrounding areas. Environmental degradation and habitat destruction are also threatening the availability of many medicinal species. Hence, documentation and conservation of ethnomedicinal knowledge are essential for preserving this valuable heritage.

Overall, the present investigation demonstrates that ethnomedicinal plants remain an important component of women's healthcare in rural communities. The study provides a scientific basis for future pharmacological and clinical research aimed at validating the safety, efficacy, and therapeutic potential of these plants. Proper conservation strategies, awareness programs, and integration of validated herbal medicines into primary healthcare systems may contribute to sustainable and accessible healthcare for women.

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